

WHAT IS CLAIMED IS:

1. A recording medium conveying device that conveys a recording medium to a recording area, comprising:
  - a pair of first conveyor rollers that are provided upstream of the recording area and convey a recording medium by nipping the recording medium therebetween;
  - a detector that detects a position of the recording medium;
  - a nipping force changing unit that changes the nipping force of the pair of first conveyor rollers; and
  - a controller that controls an operation of the nipping force changing unit in accordance with the position of the recording medium detected by the detector.
2. The recording medium conveying device according to claim 1, wherein the detector detects the position of the recording medium in accordance with a distance of the recording medium conveyed by the pair of the first conveyor rollers.
3. The recording medium conveying device according to claim 1, wherein the detector detects a distance from the pair of first conveyor rollers to a trailing edge of the recording medium.
4. The recording medium conveying device according to claim 1, wherein the controller allows the nipping force changing unit to reduce the nipping force of the pair of first conveyor rollers, step by step, in accordance with the detection result of the detector.
5. The recording medium conveying device according to claim 1, further comprising a driver that drives the pair of first conveyor rollers, wherein the controller controls the driver so as to intermittently drive the pair of first conveyor rollers.
6. The recording medium conveying device according to claim 5, wherein the controller allows the nipping force changing unit to change the nipping force while the pair of first conveyor rollers are not driven.
7. The recording medium conveying device according to claim 5, further comprising a pair of second conveyor rollers that are provided downstream of the pair of first conveyor rollers and convey the recording medium, which is conveyed from the pair of first conveyor rollers, by nipping the recording medium therebetween, wherein the driver drives the pair of second conveyor rollers together with the pair of first conveyor rollers.
8. The recording medium conveying device according to claim 7, further comprising a condition change determining unit that determines whether a current condition is going to be changed by a next intermittent driving of the pair of first conveyor rollers performed by the driver, from a condition where the recording medium is conveyed by both

the pairs of first and second conveyor rollers to a condition where the recording medium is conveyed by the pair of the second conveyor rollers only, wherein when the condition change determining unit determines that the current condition is going to be changed to the condition where the recording medium is conveyed by the pair of the second conveyor rollers only, the controller reduces the nipping force of the pair of first conveyor rollers during the next driving of the first conveyor rollers, by means of the nipping force changing unit.

9. The recording medium conveying device according to claim 8, wherein the nipping force changing unit releases the recording medium from the nipping force of the pair of first conveyor rollers or reduces the nipping force of the pair of first conveyor rollers to a strength smaller than a maximum conveying force of the pair of first conveyor rollers that can be transmitted to the recording medium.

10. The recording medium conveying device according to claim 5, wherein a conveying distance of the recording medium by the pair of first conveyor rollers at the intermittent conveyance is gradually reduced proportional to an advance of the recording medium.

11. The recording medium conveying device according to claim 8, wherein the controller corrects the conveying distance of the recording medium by the pair of second conveyor rollers when the recording medium is released from the nipping of the pair of first conveyor rollers.

12. The recording medium conveying device according to claim 1, wherein the nipping force changing unit is provided to an arm that supports one roller of the pair of first conveyor rollers so as to be movable closer to and away from the other roller of the pair of first conveyor rollers, and adjusts the nipping force of the pair of first conveyor rollers by rotating the arm via a cam.

13. The recording medium conveying device according to claim 12, further comprising a stopper, that holds the one roller away from the other roller, between the cam and the arm.

14. The recording medium conveying device according to claim 1, wherein the pair of first conveyor rollers and the nipping force changing unit includes a plurality of pairs of first conveyor rollers and nipping force changing units which are disposed in a direction perpendicular to a recording medium conveying direction, and the controller controls each of the nipping force changing units such that nipping forces of all the nipping force changing units are the same strength.

15. The recording medium conveying device according to claim 14, wherein the plurality of pairs of first conveyor rollers and the plurality of nipping force changing units are disposed in a direction perpendicular to a recording medium conveying direction, and symmetrical with respect to a center line of the recording medium in a width direction of the recording medium, and the controller allows the nipping force changing unit to reduce the nipping force of a pair of first conveyor rollers disposed at a position further from a center of the recording medium in the width direction, prior to a pair of first conveyor rollers disposed at a position near the center of the recording medium.

16. An image forming apparatus that forms an image onto a recording medium, comprising:

- an image forming device that forms an image onto a recording medium;

- a platen that is provided facing a recording operating surface of the image forming device;

- a pair of first conveyor rollers that are provided upstream of the recording area of the image forming device and convey a recording medium by nipping the recording medium therebetween;

- a detector that detects a position of the recording medium;

- a nipping force changing unit that changes the nipping force of the pair of first conveyor rollers; and

- a controller that controls an operation of the nipping force changing unit in accordance with the position of the recording medium detected by the detector.

17. The image forming apparatus according to claim 16, wherein the platen includes an air inlet that allows suction of air and an air suction unit that sucks air through the air inlet, and holds the recording medium to the platen by suction.

18. The image forming apparatus according to claim 16, further comprising a driver that drives the pair of first conveyor rollers, wherein the controller controls the driver so as to intermittently drive the pair of first conveyor rollers.

19. The image forming apparatus according to claim 18, wherein the image forming device includes a carriage that reciprocates in a direction perpendicular to a recording medium conveying direction and a recording head that is mounted on the carriage, wherein the pair of first conveyor rollers intermittently convey the recording medium, and an image forming operation is performed by driving the carriage and the recording head while the pair of first conveyor rollers are not driven.

20. The image forming apparatus according to claim 18, wherein the controller allows the nipping force changing unit to change the nipping force while the pair of first conveyor rollers are not driven.

21. The image forming apparatus according to claim 20, further comprising a pair of second conveyor rollers that are provided downstream of the pair of first conveyor rollers and convey the recording medium, which is conveyed from the pair of first conveyor rollers, by nipping the recording medium therebetween, wherein the driver drives the pair of second conveyor rollers together with the pair of first conveyor rollers.

22. The image forming apparatus according to claim 21, further comprising a condition change determining unit that determines whether a current condition is going to be changed by a next intermittent driving of the pair of first conveyor rollers performed by the driver, from a condition where the recording medium is conveyed by both the pairs of first and second conveyor rollers to a condition where the recording medium is conveyed by the pair of the second conveyor rollers only, wherein when the condition change determining unit determines that the current condition is going to be changed to the condition where the recording medium is conveyed by the pair of the second conveyor rollers only, the controller reduces the nipping force of the pair of first conveyor rollers during the next driving of the first conveyor rollers, by the nipping force changing unit.

23. The image forming apparatus according to claim 22, wherein the nipping force changing unit releases the recording medium from the nipping force of the pair of first conveyor rollers or lowers the nipping force of the pair of first conveyor rollers to a strength smaller than a maximum conveying force of the pair of first conveyor rollers that can be transmitted to the recording medium.

24. The image forming apparatus according to claim 18, wherein a conveying distance of the recording medium by the pair of first conveyor rollers at the intermittent conveyance is gradually reduced proportional to an advance of the recording medium.

25. The image forming apparatus according to claim 19, wherein the recording head is an ink-jet type recording head.